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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/825,696 | 04/15/2004 | Chiwoei Wayne Lo | 6317P090D | 9197 |

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APPLIED MATERIALS/BLAKELY
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EXAMINER

NGUYEN, SANG H

ART UNIT

PAPER NUMBER

2877

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/18/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/825,696

Applicant(s)

LO ET AL.

Examiner

Sang Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's response to amendment filed on 10/31/06 has been entered. It is noted that the application contains claims 1-6 by the amendment on 10/31/06.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honjo et al (U.S. Patent No. 5,557,105) in view of Maekawa et al (U.S. Patent No. 3,715,580).

Regarding claim 1; Honjo et al discloses a method of inspecting a workpiece, comprising the steps of:

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projecting an array of charged particle beams (503a, 504a of figure 25) from electron emitters (503, 504 of figure 25) towards the workpiece considered to be a sample (513 of figure 25);

passing each of the beams (503a, 504a of figure 25) through one of a plurality of pole pieces (e.g. eight pole pieces [802 of figure 48a or 753 of figures 49-50]) ; there being one pole piece (802 of figure 48a) associated with each beam (figure 50);

directing the array of charged particle beam (B of figure 8) onto an area of the workpiece (S of figure 8 or 513 of figure 25) so as to produce secondary or backscattered particles (figure 8 and 25) to detectors ((508, 509 of figure 25 and col.18 lines 16-40);

detecting resulting secondary or backscattered particles from the workpiece (513 of figure 24) by detectors (508, 509 of figure 25 and col.18 lines 16-40); and reconstructing an image of the are of the workpiece (S of figure 8 or 513 of figure 25) from the detected ones of the secondary or backscattered particles by detection signal processor (5 of figure 1 or 305 of figure 20 and col.8 lines 13-24). See figures 1-50.

Fig.8

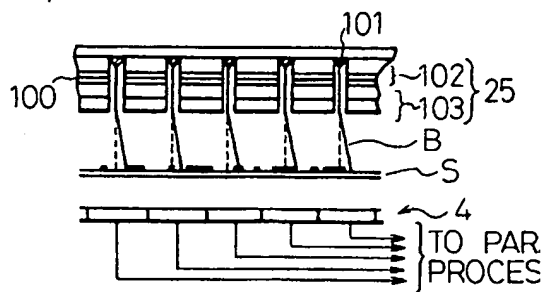
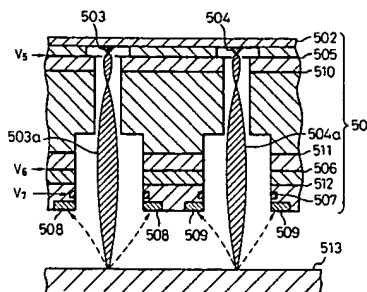


Fig. 25



Honjo et al discloses all of features of claimed invention except for each of array charged beams passing through one of the plurality of pole pieces and a single lens coil surrounding the plurality of pole pieces. However, Fernandez et al teaches that it is known in the art to providing each of array charged beams (25, 26 of figure 3 and col.1 lines 9-12) passing through one of the plurality of pole pieces (21, 22 of figure 3) and a single lens (12 of figure 3) coil (20, 20' of figure 3) surrounding the plurality of pole pieces (21, 22 of figure 3 and col.1 lines 30-35 and col.2 lines 20-55). See figures 3-4.

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3,715,580

FIG. 1 PRIOR ART

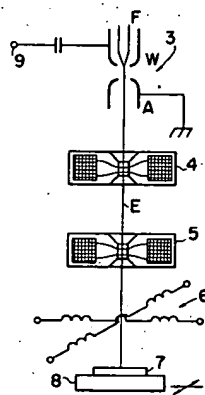


FIG. 3

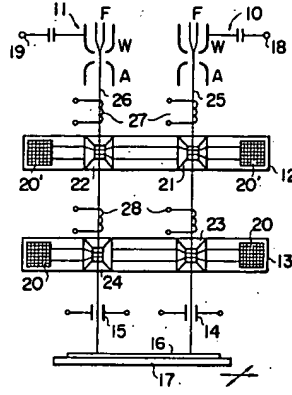
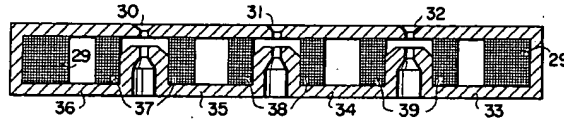


FIG. 4



Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method of Honjo et al with each of array charged beams passing through one of the plurality of pole pieces and a single lens coil surrounding the plurality of pole pieces as taught by Maekawa et al for the purpose of the astigmatism becomes minimum and reducing aberrations.

Regarding claim 2; Honjo et al discloses each of the charged particle beams (503a, 504a of figure 25) is directed onto a different region (figures 10b, 12, and 25) of the workpiece (513 of figure 25).

Regarding claim 3; Honjo et al discloses translating the workpiece (513 of figure 25) relative to an axis of the array of charged particle beams (figures 8, 11-12, and 25).

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Regarding claim 5; Honjo et al discloses focusing individually each of the charged particle beams (503a, 504a of figures 9a-9b and 25) onto the workpiece (513 of figure 25) ; and providing a plurality of additional focusing fields (figures 9a-9b), one associated with each of the beams (col.17 lines 43-65 and col.26 lines 60-67).

Regarding claim 6; Honjo et al discloses the additional focusing fields (figures 9a-9b) are located at a perimeter of the array of charged particle beams (B_1-8_N of figures 9a-9b).

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, taken alone or in combination, fails discloses or render obvious method of inspecting a workpiece and apparatus comprising all the specific elements with the specific combination including of the step of determining if one of the charged particle beams has failed; and translating the workpiece relative to the array of charged particle beams, thereby to direct a remaining one of the charged particle beams onto that portion of the workpiece onto which the failed beam was intended to be incident in set forth limitation of claims 4.

Response to Arguments

Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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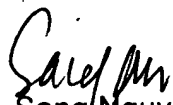
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 5, 2006


Sang Nguyen
Patent Examiner
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